

Notice of Allowability

Application No.

10/789,696

Examiner

Kathleen A. McNelis

Applicant(s)

POTTER ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/26/2006.
2. ☒ The allowed claim(s) is/are 1-5 and 8.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Claims Status

Claims 1-5 and 8 remain for examination.

Status of Previous Rejections

The previous rejection of claims 1-5 under 35 U.S.C. 103(a) as being unpatentable over Villarreal-Trevino et al. (U.S. Pat. No. 6,395,056) in view of Lotosh et al. (U.S. Pat. No. 4,049,435) and Becerra-Novoa et al. (US patent 5,445,363) is withdrawn in view of amendments to the claims (examiner's amendment below).

The previous rejection of claim 8 under 35 U.S.C. 103(a) as being unpatentable over Villarreal-Trevino et al. (U.S. Pat. No. 6,395,056) in view of Lotosh et al. (U.S. Pat. No. 4,049,435) and Becerra-Novoa et al. (US patent 5,445,363) alone or in view of Weedon et al. (June 2000) is withdrawn in view of amendments to the claims (examiner's amendment below).

DETAILED ACTION

Allowable Subject Matter

Claims 1-5 and 8 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The cited prior art:

- Villarreal-Trevino et al. in view of Lotosh et al. and Becerra-Novoa et al., and
- Villarreal-Trevino et al. in view of Lotosh et al. and Becerra-Novoa et al. and Weedon et al.

do not recite, teach or suggest a method for pre-heating and pre-drying hematite lump feed to a temperature of from about 200 °C to less than or equal to 500 °C without reduction in a non reducing atmosphere prior to charging the feed material into a gas-based direct reduction furnace, transporting through an insulated charging system having either an inert or oxidizing atmosphere

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and charging from the insulated system to the furnace and increasing the temperature of the pre-heated feed material to about 750 °C within the first 20 minutes of charging the feed material into the furnace whereby the formation of fines within the furnace is minimized.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Brockington on 9/11/2006.

Amend claims 1 and 8 to read as follows:

1. A pre-treatment process for solid lump feed material for a gas and pellet/lump-based shaft furnace direct reduction process, comprising:

preheating and predrying hematite lump feed material to a temperature of from about 200 °C to less than or equal to 500 °C ~~500°C~~, without reduction, in a non-reducing atmosphere prior to charging the feed material to gas-based direct reduction furnace;

transporting the lump feed material through an insulated charging system having either an inert or oxidizing atmosphere;

charging the feed material from the insulated charging system to the furnace; and

increasing the temperature of the pre-heated feed material within the furnace from the material introduction temperature to about 750 °C within the first 20 minutes of charging the feed material into the furnace;

whereby the formation of fines within the furnace is minimized.

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8. A pre-treatment process for solid lump feed material for a gas and pellet/lump-based shaft furnace direct reduction process, comprising:

preheating and predrying hematite lump feed material to a temperature of from about 200 °C to less than or equal to 500 °C ~~500°C~~, without reduction, in a non-reducing atmosphere prior to charging the feed material to gas-based direct reduction furnace;

transporting the lump feed material through an insulated charging system having either an inert or oxidizing atmosphere;

charging the feed material from the insulated charging system to the furnace; and

increasing the temperature of the preheated feed material within the furnace from the material introduction temperature of less than or equal to 500 °C to about 750 °C in less than 20 minutes while the feed material descends the first half meter in the furnace after introduction of the feed material into the moving bed of the furnace;

whereby the formation of fines within the furnace is minimized.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen A. McNelis whose telephone number is 571 272 3554. The examiner can normally be reached on M-F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KAM
9/11/2006




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